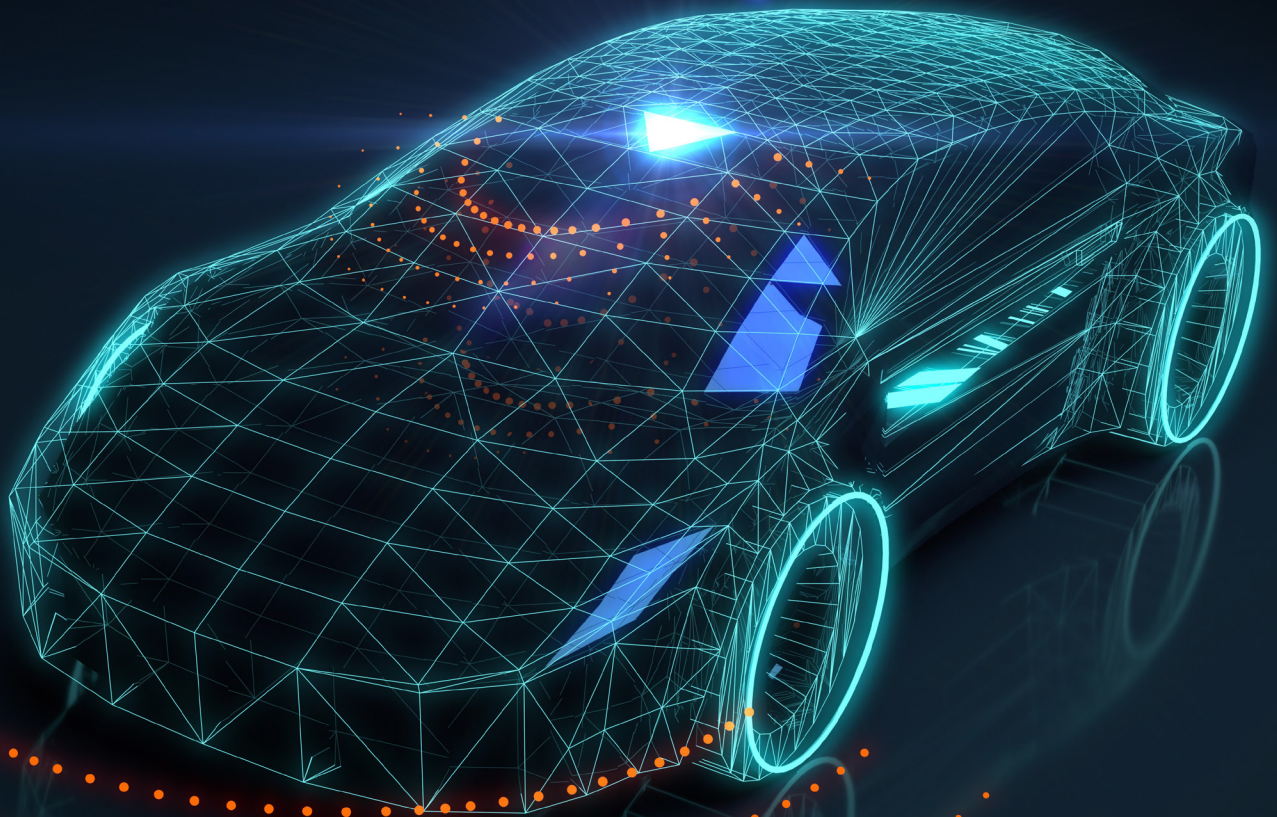


The SA Mobility Aftermarket Report

How SA's Vehicles in Operation Forecast
Model Predicts a Changing Aftermarket



Distributed by:



Experience Driving Insight: A Look at the Changing VIO

So, why this report and why now? With the volume of data and analysis that moves through this industry every day, those are fair questions. But at Schwartz Advisors, we've always been driven by two others: *What does the data actually mean? And, what should our clients do about it?*

Whether we're helping a family-owned business evaluate its options or advising a private equity client on a billion-dollar acquisition, SA delivers insight and analysis that no other advisory firm in the mobility aftermarket can match. Our team of experienced operators and industry leaders brings decades of hands-on industry knowledge to every engagement, and this report is one example of how we put that knowledge to work.

This edition, which is the first in a series of reports on the mobility aftermarket, focuses on a question we hear in nearly every client conversation: *"Where is the VIO heading, and what does it mean for my business?"* The SA VIO Forecast Model provides a great deal of insight into this critically important question.

SA. We Know the Road.



Rick Schwartz
CEO & Managing Partner

The Forecast in Brief

The U.S. mobility aftermarket is entering a period of structural change. Vehicle age, powertrain mix, ownership models, and technology complexity are all shifting, and with them, long-held assumptions about aftermarket strategy.

This report introduces the SA Vehicles in Operation (VIO) Forecast Model, a proprietary framework that projects how VIO composition will evolve through 2050. The model forecasts total VIO growth and downstream demand across more than 100 aftermarket product categories, drawing on population trends, new-vehicle sales, scrappage rates, powertrain adoption, ownership shifts, autonomous vehicle substitution, and vehicle miles traveled.

Today's U.S. VIO stands at approximately 290 million light vehicles. Rising average new-vehicle prices have pushed the average vehicle age to nearly 13 years, with almost 30% of vehicles now older than 16 years. SA projects total VIO growth of roughly 1% annually through the mid-2040s, before autonomous fleet vehicles begin to reduce individually owned vehicle counts.

The total number grows. The composition changes materially.

Electrified powertrains — particularly hybrids, EREVs, and BEVs — gain share, while pure ICE vehicles peak and gradually decline. SA has consistently taken a

more conservative stance on BEV adoption than other forecasters, a position now validated by flattening sales in both the U.S. and Europe. These powertrain shifts do not eliminate aftermarket demand; they redistribute it, reducing replacement rates in some categories while increasing wear and complexity in others.

Ownership structure is shifting as well. Fleet-managed vehicles, including delivery vans, service fleets, rentals, shared mobility platforms, and eventually robotaxis, represent a growing share of the VIO. These vehicles operate under fundamentally different service models, built around uptime, standardization, and data integration rather than traditional retail parts availability.

This report also examines how global OEM competition is rewriting the rules on cost, speed, and vehicle software, fundamentally reshaping the landscape. And it traces where aftermarket power is migrating: away from parts retailers and toward shop operators, fleet service providers, and vertically integrated dealer networks.

The companies that model these changes now will be positioned ahead of the ones still planning around historical growth assumptions.



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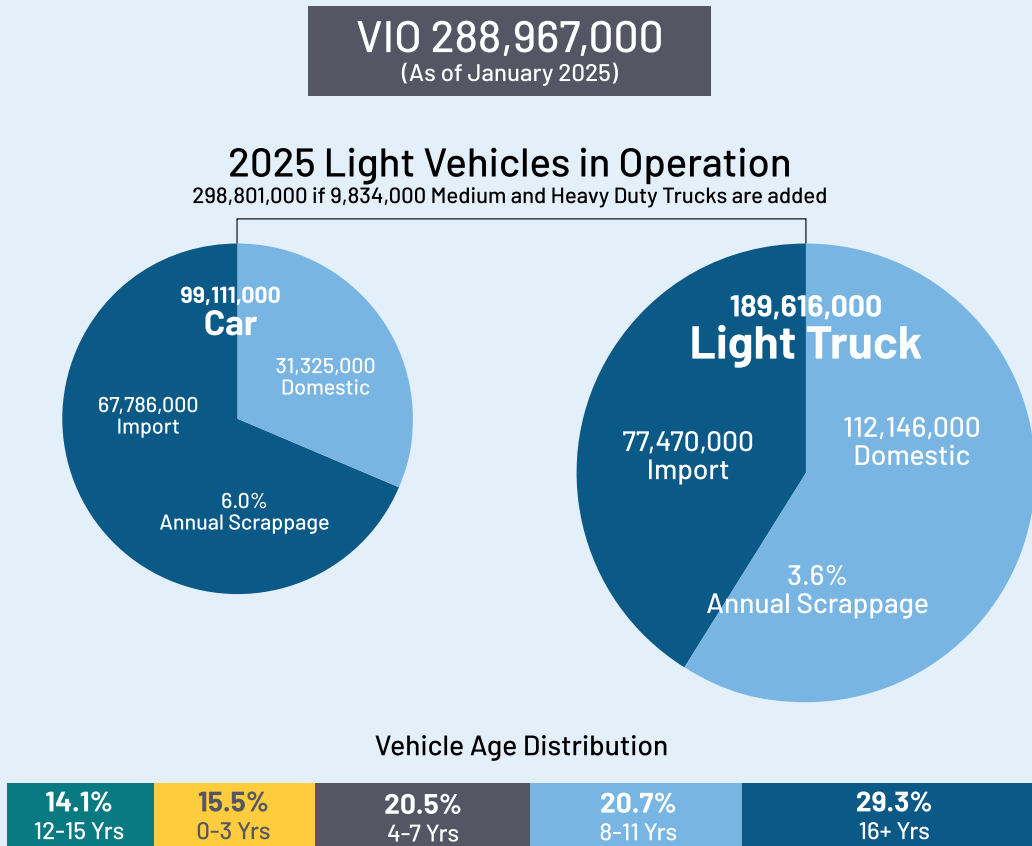
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1 | VIO DYNAMICS

Vehicles in Operation (VIO) – Establishing a Baseline

S&P Global Mobility tracks the composition and trends within the U.S. Vehicles in Operation (VIO). It estimates the VIO at approximately **290 million** light vehicles – 99 million cars and 190 million light trucks.

With the average cost of a new vehicle approaching \$50,000, many Americans are holding on to their vehicles longer. This shift has increased the average age of vehicles to **14.5 years** and light trucks to **11.9 years**, for an overall average of **12.8 years**. Nearly 30% of the VIO is now older than **16 years**. Vehicles in the aftermarket’s traditional “sweet spot” – 4 to 11 years old – represent just over 41%, or roughly **119 million vehicles**.



Average Age (Years) – Light Vehicles 14.5 – Light Trucks 11.9 – Ave VIO 12.8

WHY THIS MATTERS

An aging VIO shifts the aftermarket’s center of gravity. Demand moves away from rapid new-vehicle parts ramps and toward long-tail maintenance, reliability, and service complexity.

The SA VIO Forecast Model – Projecting VIO Growth Trends

SA’s proprietary VIO Forecast Model is a data-backed forecast of VIO growth and the implications for the mobility aftermarket. The model helps aftermarket companies anticipate long-term shifts that will affect powertrain mix, parts demand, technology adoption, and service requirements. It forecasts the VIO composition based on a variety of trends:

- > Powertrain
- > Vehicle Type
- > Fuel

The forecast also predicts demand of more than 100 different product categories within the following buckets:

- > Body & Paint
- > Braking System
- > Chemicals
- > Drivetrain & Transmission
- > Electrical
- > Emissions Control
- > Engine
- > Exhaust
- > Ignition
- > Lighting
- > Maintenance
- > Sensors
- > Steering & Suspension
- > Tires & Wheels
- > Thermal Management

SA can tune the VIO Forecast Model to analyze future sales for any aftermarket parts supplier, distributor, or retailer. The model is sophisticated enough to account for VMT changes by powertrain type and VIO scrappage rates. The model becomes more refined with time and data as SA adds forecasts on the shift to fleet vehicles and a DIY/DIFM index to account for the increasing complexity of technology and the shift to more DIFM service. [SA works with clients](#) to apply this analysis to their specific product categories and business strategies.



THE MODEL INCORPORATES SEVEN KEY ELEMENTS TO UNDERSTAND VIO GROWTH.



U.S. Population: SA estimates the U.S. population at **343 million** in 2025, rising to **381 million** by 2050. With birth rates below the replacement rate of 2.1 necessary to maintain a steady state, census figures suggest that the U.S. will depend on immigration to increase population count. Applying S&P Global Mobility’s 290 million VIO count for 2025, there are **0.845 vehicles per capita** in the U.S. today. Forecasts of both the VIO and U.S. population in 2050 show a reduction to 0.8 vehicles per capita.



New Vehicle Sales: New vehicle sales have ranged from a post-COVID-19 low of **13.5 million** (2022) to a high of **17.4 million** (2015). As autonomous vehicles provide transportation alternatives (and a substitution effect for new vehicle sales) and new vehicle pricing continues to rise, SA sees sales volumes leveling off to hold in the **15-16 million** annual range even as the U.S. population increases.



Scrappage Rates: Light vehicles are scrapped at an annual rate of **6%**, compared with **3.6%** for light trucks due to higher utility and the fact that their entry into the VIO has grown more recently than light cars. The SA model also considers life projections for BEV batteries, the shift to more fleet-managed vehicles, and the improving technologies of internal combustion engine (ICE) components, materials and synthetic oils to project an annual scrappage rate.



Powertrain Segmentation: The transition from ICE to electrified powertrains is reshaping the composition of the U.S. VIO. The VIO Forecast Model tracks nine powertrain categories, the factors influencing their adoption, and how these shifts will affect aftermarket demand over the next 25 years. See Section 2 (Powertrain Dynamics Shaping the Future VIO) for deeper analysis.



Vehicle Ownership Types: The VIO Forecast Model projects a shift from Privately Owned Light Vehicles (POLVs) to Fleet Managed vehicles, which include:

Package Delivery Vans:

UPS, FedEx, Amazon, and others are a separate segment due to the rise of online shopping. The model estimates **5.5 million** in the VIO in 2025.

Fleet Owned:

These are vehicles owned by service companies such as plumbers, contractors, and electricians. Approximately **30 – 40%** of general repair shop service is associated with fleet vehicles whose owners depend on uptime to generate cash flow. The Model estimates **4.3 million fleet vehicles** in the VIO.

Rental:

The U.S. rental fleet (Avis, Hertz, etc.) has decreased due to reduced business travel. About **2.2 million** vehicles are represented by the major rental companies, with approximately **400,000** additional vehicles on the Turo app.

Government Vehicles:

Roughly **4.3 million** vehicles are registered for governmental use (municipal, county, state, and federal).



Autonomous Vehicle Substitution Effect: Companies like Zoox, Wayve, Tesla, Avride, May Mobility, and Moia are introducing robotaxis and AV shuttles across the U.S. SA projects the ramp of AVs to occur *after 2035* - not because of technological readiness, but because of how insurance companies will handle AV accident liability. Meanwhile, vehicle OEMs (except for Tesla, VW, and Toyota) are avoiding introducing branded AV fleets, opting instead to sell to third-party “AV as a Service” providers.



Vehicle Miles Traveled (VMT): The VIO Forecast Model estimates current ICE vehicles travel between **11,000 and 12,000 miles** per year on average and accounts for the higher miles of fleet vehicles. It also considers the increase of BEV miles over time, which starts at roughly **8,000 miles per year** – mostly work commuting and other urban applications – and rises toward ICE parity over time as BEV battery ranges increase and charging times decrease.

Taxis (including Uber and Lyft):

Municipal and city taxis have decreased in volume due to Uber and Lyft. About **250,000 taxis** operate full time in the U.S., but Uber and Lyft combined add another **2.5 – 3 million** vehicles.

Shared:

While many car-sharing companies have come and gone, the remaining operators, like Zipcar, Gig, etc., still manage approximately **900,000 to 1 million** vehicles in the U.S.

Subscription:

The VIO Forecast Model estimates about **454,000** monthly subscription vehicles (including OEM/dealer-owned) in use in 2025. Subscriptions started strong but have been relegated to luxury brands whose owners can afford high monthly fees.

Autonomous Fleet Vehicles:

This category includes robotaxis, shuttles, and AV package delivery units. **SA projects a very slow start to AV adoption in the U.S.**, as several hundred demonstration vehicles populate a half dozen cities.

WHY THIS MATTERS

VIO forecasting reduces strategic blind spots before they show up in your numbers. Shifts in powertrain mix, ownership models, and miles driven will directly impact product demand and capital decisions. The companies that model those changes early make better bets than the ones reacting late.

Considering all of the above, the VIO Forecast Model projects VIO growth of approximately **3 million vehicles per year**, or about **1% annually**. Growth is expected to slow over the next decade and eventually decline to negative growth in the 2040s as autonomous fleet vehicles begin to replace individually owned vehicles.



VIO Growth Outlook Through 2050

There are many other considerations when forecasting VIO growth, including but not limited to:

- Expansion of the U.S. electrical grid for BEV charging
- Refining capacity of e-fuels and renewable diesel
- The future likelihood of Zero Emission Vehicle (ZEV) mandates
- Rollout of next-generation nuclear energy
- Fuel cell and hydrogen technology development

With the long-term VIO outlook established, the next section examines the role electrified powertrains will play in shaping these dynamics.

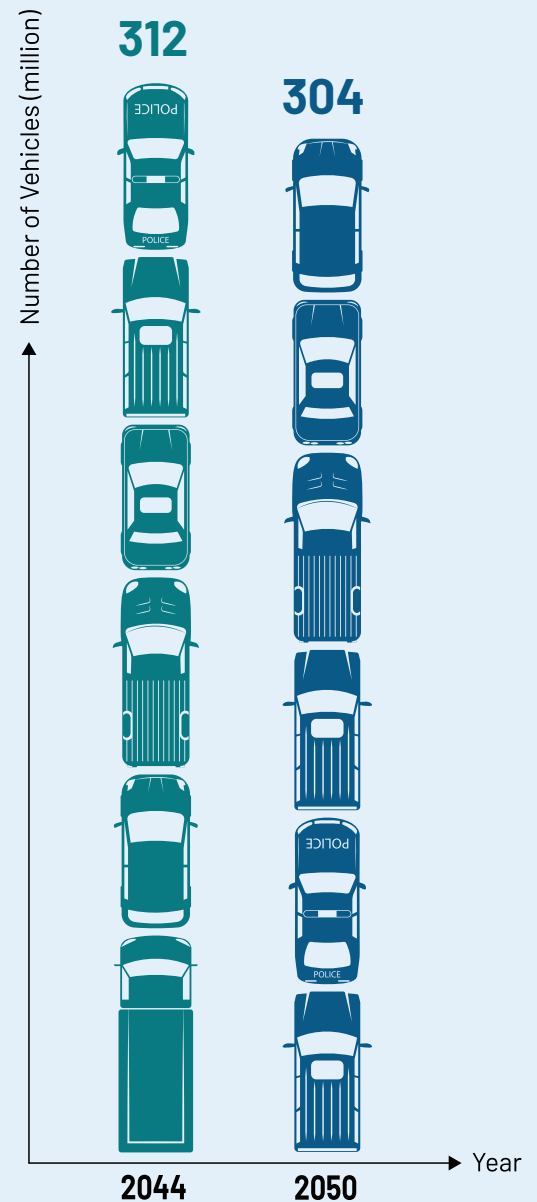
HOW SA TESTS VMT SENSITIVITY

SA uses the Federal Reserve Bank of St. Louis “Trailing 12-Month Moving Vehicle Miles Traveled” report and runs data regression for the effects of gas prices and U.S. economic indicators to show how VMT varies in recessions. There is no evidence to suggest VMT is impacted by gas prices under \$4.00 per gallon.



Projected Vehicles in Operation

(VIO Growth and Decline)



2 | POWERTRAIN DYNAMICS SHAPING THE FUTURE VIO

The transition from ICE to electrified powertrains is reshaping the composition of the U.S. VIO. Below are the nine powertrain categories tracked within the SA VIO Forecast Model, the factors influencing their adoption, and how these shifts will affect aftermarket demand over the next 25 years.

Powertrain Categories

SA tracks nine different powertrains to build its forecast:

HEV	Hybrid Electric Vehicle	Toyota Prius	Gas or diesel engine combined with a small battery-electric drive.
MHEV	Mild Hybrid Electric Vehicle	Hyundai Tucson 48V	An electric motor and 48V battery assist the internal combustion engine (ICE) to improve fuel efficiency, performance, and emissions. The 48V system can also offload engine parasitics.
EREV	Extended Range Electric Vehicle	Chevrolet Volt; Ram 1500 Ramcharger	An ICE drives a generator that provides power to the vehicle's battery. EREVs are gaining traction globally, with 18 new Chinese models coming in 2026.
PHEV	Plug-In Hybrid Electric Vehicle	Mazda CX-90 PHEV	A high-voltage battery charges like a full BEV but is combined with a gas or diesel engine for extended range. This is a very expensive powertrain solution.
BEV	Battery Electric Vehicle	Tesla Model Y	Full battery-powered electric motor drive with no ICE.
Diesel ICE	Diesel Internal Combustion Engine	Ram 1500 Diesel	Diesel cycle ignites fuel solely through compression of air/fuel in the cylinder or combustion chamber.
Gas ICE	Gasoline Internal Combustion Engine	Ford F-150 Gas	Spark-ignited gasoline engine generates power.
L5 AV Gas	Fully Autonomous Vehicle, ICE Powered	Waymo Chrysler Pacifica vans	No human driver; early-stage AV deployment with gas engines.
L5 AV BEV	Fully Autonomous Vehicle, BEV Powered	Nuro, Tesla Robotaxi, Zoox, Waymo fleets	No human driver; BEV power.

WHY THIS MATTERS

Small shifts in VMT, autonomy timing, or powertrain adoption can materially change long-term VIO outcomes. As these shifts occur, aftermarket demand will redistribute. Companies that track where that redistribution happens can adjust product, inventory, and capability investments ahead of the curve.

Forecasting Approach

For each of these vehicle types, SA forecasts annual New Vehicle Sales, VIO, and total Vehicle Miles Traveled (VMT) for 2025–2050 using several metrics, including:

- › 2018 baseline VIO counts
- › Year-over-Year new vehicle sales growth
- › Annual VIO scrappage rates
- › VMT per year
- › Vehicle ownership percentages – including privately-owned light vehicles (POLVs) and fleet-managed vehicles (regular fleets, shared fleets like Zipcar/Gig, and AV robotaxi services such as Waymo, Zoox, and Tesla)
- › AV substitution effect – forecasted impact of autonomous vehicles reducing individually-owned new vehicle sales

SA's goal is to provide clients with a "long horizon" view of how vehicle technology may affect parts replacement and general repair requirements. SA has also historically taken a more conservative stance on BEV adoption rates. When other organizations projected 100% BEV new vehicle sales by 2035, SA forecasted the low 30% range – a trajectory now validated by flattening BEV sales in both Europe and the U.S.



Powertrain Type Dynamics

HYBRID ELECTRIC VEHICLES (HEVS)

Hybrids are "having their moment" as lack of charger availability and dependability, and long charge times have hindered BEV launch. SA forecasts hybrids at **14.5%** of new vehicle sales in the mid-2020s, peaking near **19%** in 2030. After that, the rise of EREVs, along with sales growth in MHEV and PHEV variants, begins to erode HEV market share, dropping to **11.6%** in 2040 and down to about **3%** in 2050.

Today, hybrids are increasingly purchased for performance. The 2025 Toyota 4Runner illustrates this: the standard 4-cylinder i-Force gas engine produces 278 hp and 317 lb.-ft. of torque while providing 21 miles per gallon fuel economy. The i-Force Max hybrid option delivers 326 hp and 465 lb.-ft. of torque with only a modest gain in fuel economy (2 miles per gallon at 23 mpg). The roughly \$5,000 price difference is largely about power and torque, not economy.

SA's View of Hybrid Sales in 2026

- › 50% of Toyota's U.S. sales will be hybrids
- › Hyundai is doubling its hybrid lineup
- › Honda hybrid sales are at 25%
- › 40% of Ford's 15 models offer hybrid variants
- › GM has 27 models but only 1 hybrid, though it plans 6 PHEVs for 2027
- › Mercedes sits above 40% hybrid mix; BMW around 25%



Even with the spike in hybrid demand, I still see the straight HEV as the 'consolation prize' of the electric drive race. In other words: 'I wanted a full BEV but they are too expensive and come with too many challenges right now, so I'll settle for a hybrid to feel I'm still doing my bit for the environment and better fuel economy.' That consolation prize is about to be replaced with better technological solutions."

– DEREK KAUFMAN



MILD HYBRID ELECTRIC VEHICLES (MHEVS)

48V mild hybrids combine an electric motor with a 48-volt battery and a belt-driven or integrated starter-generator to assist a downsized ICE. The 48V architecture allows engine parasitics such as water and steering pumps, AC compressors, superchargers, and turbochargers to be driven electrically, which increases the engine's overall efficiency. The 48V system can also provide power for active suspensions.

MHEVs are less expensive to build and maintain than HEVs or PHEVs and offer lower fuel consumption, reduced emissions, and enhanced performance through the additional torque added by the 48V motor.

While most growth so far has occurred in Europe, SA forecasts a U.S. uptick in SUV and luxury models – rising to **2% of new vehicle sales in 2040** and **3.7% by 2050**. That results in VIO numbers under 1% in 2040 and still under 2% by 2050. Globally, MHEVs may play a much stronger role, especially if e-fuels scale to drive ICE variants to higher levels in the next 10 years, with some forecasters predicting **15% CAGR** over the next decade.

EXTENDED RANGE ELECTRIC VEHICLES (EREVS)

EREVs are the “unconventional wisdom winners” of future powertrains. Though only now entering the U.S. market, they represent the fastest-growing electrified segment globally. In China – where New Energy Vehicles (NEVs, including BEVs, PHEVs, and EREVs, but not HEVs) represent about 53% of 2025 new vehicle sales – EREVs have grown from **3% to 10%** since 2020.

EREVs use a small, highly efficient internal combustion engine running at a constant, optimized RPM to drive an onboard generator that charges a lithium-ion battery, which then powers electric traction motors that drive the vehicle. EREVs operate in three modes:

- › **Charge Depleting Mode:** Runs solely on electric power like a pure BEV. Typically, the vehicle is fully charged prior to starting its journey. During this mode, the engine does not run.
- › **Charge Sustaining Mode:** Once the battery reaches a predetermined threshold, the engine starts to drive a generator that charges the battery. Unlike PHEVs, the engine is not connected to the drive wheels and runs at a fuel efficiency-optimized and constant RPM.
- › **Supplemental Power Mode:** If the vehicle is calling for more power than the battery can supply, the engine can supply extra electricity to the drive motors through the generator.



Why have I given EREVs the unconventional wisdom winner title? Because all current reports suggest PHEVs are the vehicles of choice for those seeking long range operation, but I believe the elegance and cost advantages of EREV technology will ultimately win out as our attitudes are shifting from government-mandated ICE bans toward a ‘consumer driven decarbonization’ that sees a mix of new ICE technology and compelling BEV designs vying for the new car sales future.”

– DEREK KAUFMAN



PHEVS – PLUG-IN HYBRIDS

Spurred by the \$7,500 tax credit, PHEVs have seen a recent surge in SUV and luxury brand sales in the U.S. However, SA believes this spike is short-lived. This complicated, heavy, and expensive powertrain design will likely peak around **3% of U.S. new vehicle sales in 2030** and then enter a slow decline to between **1-2% of sales through 2045**, ending the forecast period at just 0.5%. PHEVs in the VIO will hover around 2% through the 2040s before falling to **1% by 2050**.

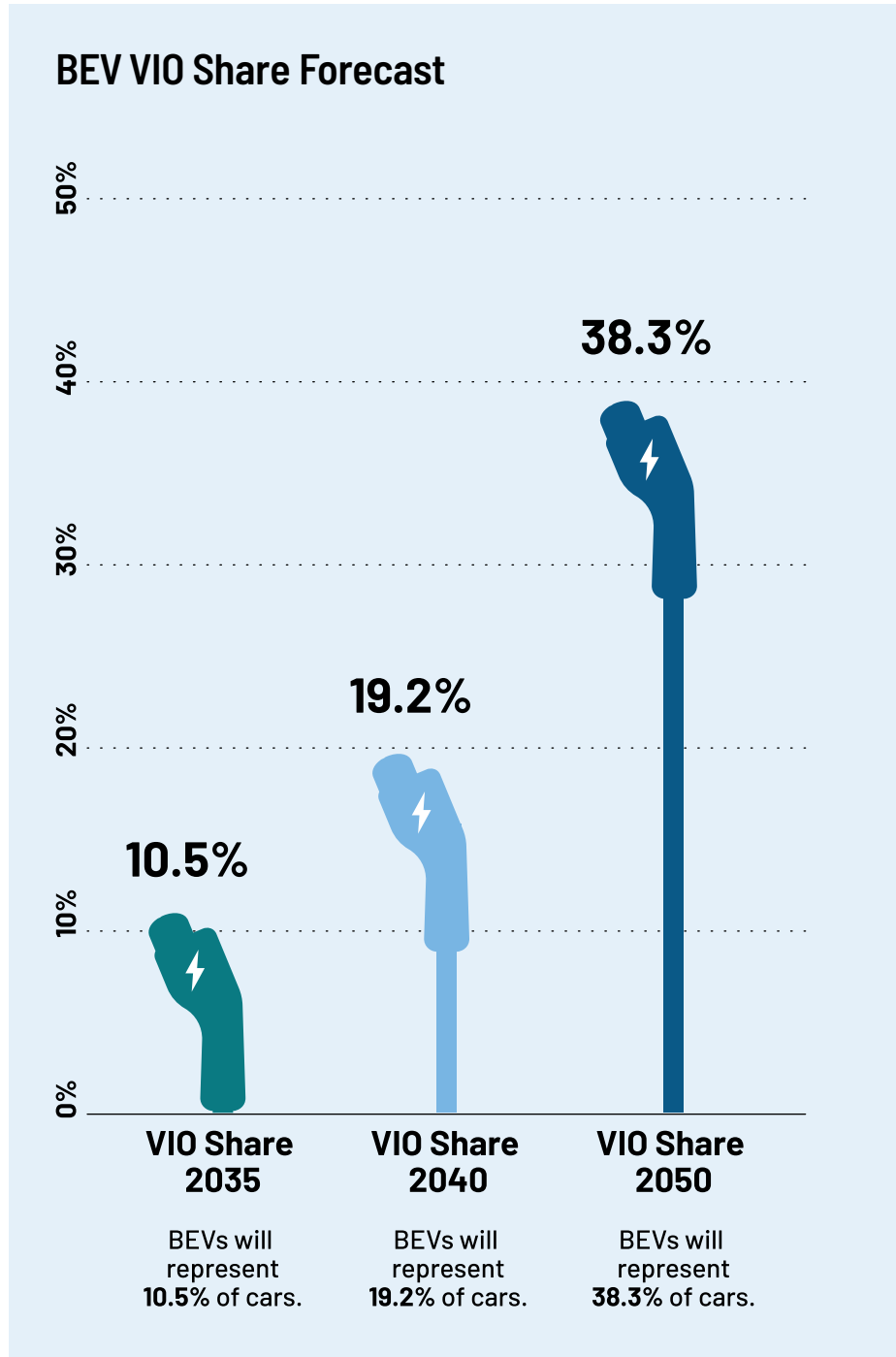
BEVS – BATTERY ELECTRIC VEHICLES

When others projected 90-100% of new vehicle sales would be electric drive by 2035, SA forecasted numbers in the 30% range.

Over the past three years, others have reduced their forecasts as the market moved through “early adopters” into the mainstream buying public, who now questions the availability and dependability of charging units.

The technological strengths of BEVs are compelling. They are efficient converters of electrical energy to tractive motion, and improvements in range and charge times will support continued – albeit slower – growth. SA forecasts BEVs at **8.4% of new vehicle sales in 2025**, rising to **29% in 2035**, peaking at **46% in 2045**, and then easing slightly to **43.7% in 2050** as L5 BEVs begin their ramp after 2040 to **13% of sales in 2045** and **21% in 2050**. SA forecasts that the combined share of individually owned and fleet-managed BEVs will reach **64.6% by 2050**.

BEVs will begin to play a material role in the VIO by 2030, reaching nearly 5% of vehicles on the road. SA forecasts BEV VIO share to reach **10.5% in 2035**, **19.2% in 2040**, and **38.3% in 2050**.



ICE – DIESEL AND GAS

The future of low-carbon or near-zero emission fuels is an issue of promise versus practicality. Renewable fuels such as biodiesel, synthetic e-fuels, hydrogen-infused variants, used in highly efficient engines, can produce ample performance with greenhouse gas totals that are very nearly equal to BEVs, especially when considering the entire ecosystem of fuel (and battery) production and vehicle efficiency in turning fuel into power. But the path to scaling these ICE alternatives is problematic. Four major factors will decide their viability:

- › **Refining Consistency and Capacity:** Governments continue to debate whether to subsidize the transition to BEV power, but it is easy to forget that “big oil” has been subsidized in one form or another for many years. The result is a large, highly consolidated refining capacity capable of producing consistently high-quality fuel blends that engine designers can depend on to burn in a predictable manner.
- › **Lubricity:** Hydrocarbons are slippery and provide good lubricity for moving parts in an engine’s cylinders and valve train. E-fuels – and the reduced sulfur in today’s diesel – reduce lubricity and can result in higher or faster wear and overall shortened engine life. Engine designers have adapted to no-lead and low-sulfur gasoline and can roll with the future changes required by e-fuels and the variations in biodiesel blends, but it will take time.
- › **Cost:** E-fuels are produced by combining green hydrogen and captured CO₂ using renewable electricity. They are deemed “carbon neutral” because the CO₂ used in synthesis is first removed from the atmosphere through solid or liquid Direct Air Capture (DAC), creating a “negative emissions” starting level for the e-fuel engine.

A NOTE ON FUEL CELLS (FCEV) AND HYDROGEN



I have purposely excluded FCEVs and pure hydrogen-powered vehicles from this report because I think they are both nascent technologies with too much development to do before a solid forecast can be made. Hydrogen may become part of the ICE e-fuel variant and FCEVs may erode EREV sales in the 2040s. I'll stay in touch with the development players to lock in a projection in a future edition of the SA Report.”



– DEREK KAUFMAN

The captured CO₂ is then combined with hydrogen that has been separated from water through electrolysis. The resulting “syngas” has the upside of being a “drop-in fuel,” meaning it can be burned by existing engine combustion systems without cylinder or valve train modification with an energy density comparable to normal gasoline (notwithstanding the lubricity issues noted above).

The downside is the high amount of green electricity needed for both the DAC and electrolysis functions, and the resulting cost of its use. While estimates vary widely, today’s low-volume production costs can be estimated at around \$20 per gallon. As capacity scales up, a price comparable to conventional gasoline may be achievable, although this would most likely occur after 2035.

- › **Electricity Availability:** The move to e-fuels is happening at the same time as the exponential growth of artificial intelligence. Both require very large amounts of electricity. The emissions profile of e-fuels depends on that electricity being green (from sources such as solar or hydro). Until next-generation nuclear plants come online, the supply of alternative fuels will be paced by the availability of electricity.

L5 AUTONOMOUS VEHICLES – L5 GAS AND BEV AVS

The VIO Forecast Model tracks fully L5 no-driver autonomous vehicles separately from L3/L4 vehicles, which have some AV features but will be privately owned by drivers using those features some of the time.

Early last year, the DOT and NHTSA announced a partnership to define a framework to allow the use of autonomous vehicles on American highways. Mid-year, NHTSA took another step by accelerating the review process for AV deployment to ease the regulatory burden on AV OEMs.

The distant drumbeat of robotaxi fleets is getting louder, and now is the time for aftermarket players to get serious about their role in supporting the rollout of this new industry segment.



WHY THIS MATTERS

The VIO Forecast Model predicts about **1.8%** of new vehicle sales in **2035** will be L5 AVs, moving to **6.5%** in **2040**, then ramping more significantly in the 2040s to **21% in 2050**. Just **0.3%** of the VIO will be L5 AVs initially, rising to **3.9%** by **2045** and **7.6%** in **2050**. SA experts project that a small percentage of these vehicles will be gas-electric hybrids over the next 5 years, but ultimately the segment will move to 100% BEVs. This points to a gradual long-term shift in vehicle technology, service complexity, and aftermarket preparation requirements.

Companies to watch include Waymo, Zoox, Tesla, Avride, Moia, Wayve, and Toyota (whose 3-Palette shuttle design has been running in demo mode for several years). Today, there are approximately 2,000 robotaxis running in just a half dozen U.S. cities, but AV companies are ramping now to make these fleets more significant in the early 2030s.

Parts manufacturers should understand that the robotaxi market will not adhere to the aftermarket's typical "5-year and older sweet spot" targeting. Fleets will run 24/7 in urban settings that keep the average trip mileage low but subject vehicles to constant stopping and starting and higher overall annual mileage per year than individually owned vehicles. While OE dealerships will fight hard to capture robotaxi fleet service business, repair shops and aftermarket parts will be attractive on non-warranty wear service and repair, and this market will not be subject to underperformed service.

General repair multi-shop operator (MSOs) should be planning now to offer high-quality service programs that deliver a consistent level of service on every robotaxi in a fleet. Robotaxis will be subject to annual safety certifications and continuous maintenance to keep fleets up and running 24/7.

Aftermarket leaders should be initiating conversations with companies like Waymo and Zoox now about how their parts and service programs will evolve.

Car washes will need preferential lanes with full AI payment handling to offer the external and interior cleaning required for robotaxis. Special cleaning solutions for AV sensors will help ensure proper operation in inclement weather.

Parts distributors will package high-volume maintenance parts and use robotaxis for on-demand parts delivery to general repair shops or fleet maintenance facilities.

Readers may notice the absence of GM and Ford in this list. Both companies made major investments in robotaxi and AV fleet operations, then exited those efforts. Ford has since formed a new entity, Latitude AI, by rehiring a subset of the employees it let go when exiting its Argo.AI investment and is now focused on L3 driver-assist features.

GM is reviving its AV investment by focusing Cruise on L4 and L5 capabilities. Both companies believe individuals will own L5 AVs and apply them to personal use. However, liability issues and the resulting huge insurance premiums will make L5 AV ownership by individuals very problematic.

As a result, early L5 AV deployment is expected to skew heavily toward fleet-operated robotaxi models.

SA

WHY THIS MATTERS

Fleet-dominated VIO shifts aftermarket power from parts availability to service reliability. Suppliers and service providers that cannot meet uptime, standardization, and data requirements may be structurally excluded.

VIO Dynamics Trends

SA uses the term “dynamics” because the VIO is an evolving vehicle parc that continually generates new opportunities. **A few examples:**

AWD – ALL-WHEEL-DRIVE POWERTRAINS

AWD powertrains have moved from approximately 35% to 65% of new vehicle sales over 2015–2025 as vehicle manufacturers shifted from sedans to higher-margin SUVs, CUVs, and pickups (light truck segment).

VIO IMPACT

- The vehicle’s higher utility means they stay in the market longer. The passenger car scrap rate is 6% per year, while the light truck segment is 3.6%.
- AWD platforms require all four tires to be changed once tread wear is beyond a certain point. The move to light trucks and AWD is now driving tire sales beyond the growth rate of the general aftermarket, with tire sales rising from **\$45 billion in 2015** to an estimated **\$65 billion in 2025**.

AWD is not the only factor driving tire sales (increased VMT, aging fleet running longer, heavier vehicles, decreased road surface quality, etc.), but it is generating increased service opportunities.

- AWD adds complexity to the drivetrain, resulting in more service and replacement parts. Key failure modes: differential and transfer case failures, driveshaft and U-joint wear, and fluid contamination or low levels.

ENGINE SIZE

Since 2015, there has been a steady migration of engine cylinder configurations toward smaller, higher-horsepower-per-cylinder designs, driven by fuel efficiency regulations, downsizing for better MPG, the rise of turbocharged engines, and the growing popularity of SUVs and crossover vehicles.

Engine trends include:

- **3-Cylinder** – Moving from 0% of 2015 sales to roughly 7% of new vehicle sales in 2025 and rising significantly in horsepower. The 2026 Toyota GR Corolla 3-cylinder engine delivers 300 hp powering an all-wheel-drive drivetrain.

- ▶ **4-Cylinder** – Now the mainstay of vehicle platforms, growing from 50% of sales in 2015 to over 60% in 2025. Who would have thought that a 2026 Mercedes 300 sedan would come standard as a 4-cylinder mild hybrid?
- ▶ **6-Cylinder** – Showing a 12% decline from 30.2% to 26.5% over a 10-year period, the 6-cylinder format is a victim of vehicle frontal area reductions and turbocharged 3- and 4-cylinder layouts offering the same or even more horsepower.
- ▶ **8-Cylinder** – Large engines have been declining over the past 20 years, moving from 12.3% to 10.7% of vehicle car sales.

Moving forward, the 3-cylinder layout is expected to be the fastest-growing engine, with 4-cylinder engines rounding out most of the remaining market. Six- and eight-cylinder formats will largely disappear except for pickup towing packages and statement vehicles like the recently revived 2026 6.2L, 710 hp V8 Dodge Durango SRT Hellcat Jailbreak. As the folks from Dodge say, “It’s not here to blend in.”



© 2026 Dodge, 2026 6.2L, 710 hp
V8 Dodge Durango SRT Hellcat Jailbreak

Adding to the 3-cylinder rise will be the EREV electric drive category. SA sees this ICE/BEV hybrid as the overall winner in the race for low-carbon, high-efficiency extended-range electrification. Most EREVs need only a 3-cylinder engine to drive a generator that charges the battery, which in turn powers electric drive motors for traction.

VIO IMPACT

The quality of 6- and 8-cylinder engines has improved significantly over the past 20 years, reducing the need for engine rebuilds and internal replacement parts. However, the more highly stressed components of 3- and 4-cylinder engines may reverse that trend somewhat, even as improved lubricants and new materials aid engine life.

If contract engine manufacturing becomes more prevalent, expect a shift in the engine parts supply chain away from vehicle OEMs and toward contract manufacturers.

TURBOCHARGED ENGINES

The downsizing of engines and the push to increase combustion efficiency, meet CAFE standards, and increase MPG has resulted in a marked increase in turbocharged engines across the VIO. Turbos were used in about 20% of new vehicle sales in 2015 and have now moved beyond 60% in 2025. SA expects fully **70%** of the market to be turbocharged by **2030**.

The rise in turbo adoption has attracted significant technology gains in designs:

- Following the general trend of offloading belt-driven engine parasitics (water and steering pumps, AC compressors) in favor of electric drive, watch for a real increase in the application of electrified turbos that offer less turbo lag and faster boost, especially in hybrid powertrains. 48V e-turbos will move to 20% of the turbo market in the next 5 years.
- Variable vane geometries have been growing steadily. An estimated 40–45% of applications will be variable-geometry turbos (VGTs), particularly in the 3-cylinder segment.
- Advanced alloys such as titanium and inconel, as well as 3D-printed components, will reduce turbo weight and increase durability.
- The use of gasoline particulate filters on turbocharged direct-injection engines, coupled with “Internet of Things” sensors for real-time particulate monitoring, will help ICE powertrains reach the low-carbon or near-zero emission levels sought by Western governments post-2035.

VIO IMPACT

Say the word “turbocharger” to an aftermarket professional and the immediate thought is often “remanufacturing core value.” It is difficult to forecast how new turbo designs will wear and what their replacement rates will be, but the obvious point is that the turbo aftermarket is gaining strength as their share of engine applications increases. SA expects a consolidation of the fragmented turbo remanufacturing segment with larger, national players taking market share over time.

BEV FAILURE MODES

While BEV sales leveled off in 2025, SA continues to forecast their rise in new vehicle sales and in the VIO as battery range increases and charge times decrease. Much has been made of the reduced maintenance costs of BEVs versus ICE powertrains, but recent reports reveal emerging aftermarket opportunities.

- › **J.D. Power:** The 2024 U.S. *Initial Quality Study (IQS)* and *Vehicle Dependability Study (VDS)* report 263 problems per 100 vehicles (PP100) for BEVs, versus 179 PP100 for ICE vehicles.
- › **Mitchell:** The 2024 *Plugged-In: EV Collision Insights* report notes BEV collision claims frequency rose 38% year over year to 2.71%, with average repair severity at \$6,236 – 23% higher than ICE (\$5,066), due to electronics complexity.
- › **Consumer Reports:** BEV PP100 findings from 2023 and 2024 show BEVs are improving but still trail ICE vehicles in failure frequency. In a recent report, BEVs overall showed 42% more problems than ICE vehicles (down from 79% more in 2023). As expected, PHEVs are the worst offenders, with 70% more problems than ICE vehicles in 2024.

VIO IMPACT

SA is watching several BEV failure modes that are likely to shape future aftermarket demand:

- › **Battery Degradation:** Overall, lithium-ion batteries have held up well in most BEVs and show the potential for 10 or more years of life. About 20% of the market, however, has shown issues such as thermal runaway, capacity loss (more than 20%), and cell wear, particularly in situations involving a high percentage of fast charging.
- › **Charging System:** Connector issues, onboard charger failures, and software faults represent roughly a quarter of all BEV repair order write-ups.
- › **Motor Overheating:** Approximately 15 – 20% of BEV repairs are due to motor overheating, inverter faults (IGBTs and MOSFETs), and regenerative braking failures. There have also been reports of motor bearing failures due to arcing across motor housings.
- › **Thermal Management:** SA has been advising clients to watch the thermal management segment of BEV repair as a likely source of aftermarket growth. Brushless Direct Current motor and pump failures, intelligent valve issues, and fluid coupling failures make these complex systems that must run 24/7 to maintain battery temperatures – whether the vehicle is moving or not. This is one of the most promising categories for BEV parts replacement.
- › **Sensors:** Between Advanced Driver Assistance Systems (ADAS) and Battery Management Systems (BMS), BEVs carry significantly more sensors than most ICE powertrains. More sensors mean more potential failure points.

Parts Replacement Forecasting

Understanding VIO powertrain dynamics allows SA to drill one layer deeper and project how parts replacement rates will be affected by BEV and AV penetration.

For example, regenerative braking on BEVs reduces the use of friction brakes and, therefore, the replacement of rotors, calipers, and pads. On the positive side, BEV suspension, steering, and driveline parts (such as CV joints) are expected to wear more than in ICE vehicles due to heavier vehicle weight and higher starting torque of BEV drive systems.

Autonomous vehicles will also travel more miles and operate more hours per year. At this stage, SA applies a simple 2X factor to estimate their impact on parts replacement, with the expectation that this factor will be refined as more is learned about the actual VMT dynamics of AVs.

The illustration below provides a high-level summary of how BEVs affect key components and service categories.

SA has applied this thought process to more than 100 part replacement rates and can now work with clients to forecast how parts sales will evolve between now and 2050.



How BEVs Affect Aftermarket Service

BEVs 20–30% less overall service cost than ICE

- ▲ Aftermarket Positive
- ▼ Aftermarket Negative

Tires ▲

- More wear – heavier vehicles, higher torque
- Less wear – software algorithms, lower rolling resistance tires, less VMT per vehicle, higher tire pressure
- **IMPACT** – up to 50% increase in wear, more expensive special compound tires for range

Oil/Quick Lube ▼

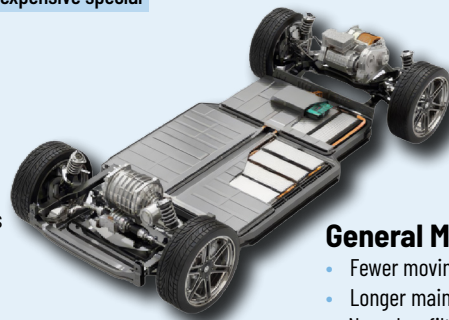
- Mix of single gear and two-speed transmissions – Tesla oil change at 12-year mark
- Coolant checks, top off and periodic changes
- Air filter changes
- **OVERALL** – 95% reduction vs ICE

Undercar/Suspension ▲

- More wear – heavier vehicles, higher torque, higher load on shocks, front and rear drive shafts on some vehicles
- Less wear – heavier drive shafts for torque
- Increasing sophistication of suspension systems
- **IMPACT** – 10–20% increase in wear on suspension and drive components but less VMT

Brakes ▼

- More wear – heavier vehicles, more inertia
- Less wear – regenerative braking
- **IMPACT** – 50% reduction in brake wear



Thermal Management ▲

- Complicated radiator and intelligent valve systems
- PTC and heat pump for battery and cabin heat
- Systems run 24/7
- **IMPACT** – 25% increase vs ICE

General Maintenance ▼

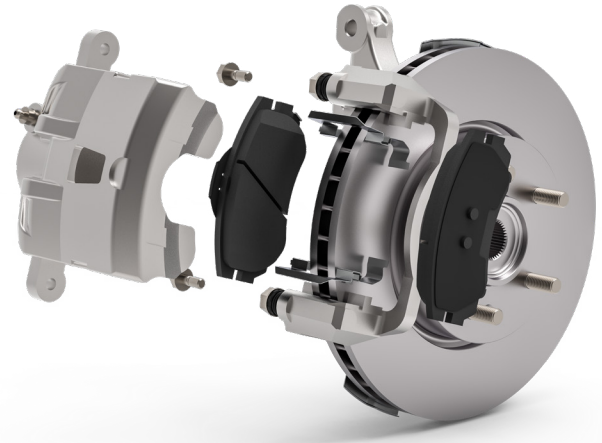
- Fewer moving parts than ICE
- Longer maintenance intervals
- No or low filter, oil changes, ignition tune up, etc.
- **IMPACT** – 50–60% overall reduction in vehicle maintenance vs ICE

Failed Parts ▲▼

- Failure rates 30–40% less than ICE
- Repair costs 20–30% higher than ICE
- **IMPACT** – 15–20% less part failure revenue than ICE unless battery replacement is required

EXAMPLE 1: BRAKE PARTS – ROTORS, CALIPERS, AND PADS

BEVs are equipped with regenerative braking systems that can slow – and in some cases nearly stop – the vehicle without relying on friction brakes. The SA model takes into account the heavier weight of BEVs but still projects a **50% reduction in brake parts** replacement versus ICE vehicles. Countering this reduction is a 100% increase factor in brake wear for all AVs in the VIO.



› **In-year impact:**

- By 2035, brake parts replacement rate volumes are projected to be down 4.92%, while inflation drives revenues up 14.54%.
- By 2050, volumes are down 11.43%, with revenues up 31.4%.

› **Change vs. 2025 baseline:**

- In 2035, volumes are up 2.98% because the overall VIO has grown, and revenues are up 21.8%.
- By 2050, volumes are 4.9% below 2025 levels, even with a larger VIO, because BEVs account for a much higher percentage of vehicles in operation. Revenues, however, are up 38.5% after 25 years of inflation.

BRAKE PARTS						
BEV Effect: -50% / AV: +100%	2025	2030	2035	2040	2045	2050
VIO change from Jan 1, 2025	1.9%	6.4%	7.4%	8.3%	8.8%	6.4%
In Year Volume Change %	-1.1%	-2.4%	-4.9%	-8.1%	-10.8%	-11.4%
In Year Revenue Change %	0.8%	8.5%	14.5%	19.2%	24.1%	31.4%
Volume change % from Jan 1, 2025	1.7%	4.8%	3.0%	0.4%	-2.0%	-4.9%
Revenue change % from Jan 1, 2025	1.7%	14.3%	21.8%	27.9%	33.8%	38.5%

Brake parts volume and revenue.

EXAMPLE 2: STEERING AND SUSPENSION

BEVs are heavier with higher starting torque than ICE powertrains, which can accelerate wear on steering, suspension, and driveline components such as CV joints. Replacement rates are:

- 1.0% for steering racks
- 1.6% for shock absorbers
- 1.9% for CV joints



STEERING / SUSPENSION

BEV Effect: +20% / AV: +100%	2025	2030	2035	2040	2045	2050
VIO change from Jan 1, 2025	1.9%	6.4%	7.4%	8.3%	8.8%	6.4%
In Year Volume Change %	0.4%	1.1%	2.8%	7.3%	15.3%	25.9%
In Year Revenue Change %	2.3%	12.3%	23.9%	39.2%	60.4%	86.7%
Volume change % from Jan 1, 2025	2.0%	7.2%	10.0%	15.8%	25.1%	33.4%
Revenue change % from Jan 1, 2025	2.0%	16.9%	30.1%	47.5%	70.8%	94.4%

Steering/suspension volume and revenue.

SA forecasts a **20% increase** in wear caused by BEVs, while retaining the 2X AV factor.

➤ **In-year view:**

- The 20% wear increase results in a 2.8% volume increase in 2035, with revenues up nearly 24%.
- By 2050, volumes rise 26%, with revenues up 87%.

➤ **Change vs. 2025 baseline:**

- In 2035, volumes are up 10% and revenues are up 30%.
- By 2050, volumes are up 33.4% and revenues are up more than 94%.

EXAMPLE 3: SPARK PLUGS

To show the most extreme effect of BEV penetration, SA uses spark plugs as an example.

- The 2025 replacement rate of spark plugs is 10.45% of the VIO.
- The BEV effect is -100%.
- The 2X AV factor remains in place, since a small share of AVs could be hybrid powertrains.



SPARK PLUGS						
BEV Effect: -100% / AV: +100%	2025	2030	2035	2040	2045	2050
VIO change from Jan 1, 2025	1.9%	6.4%	7.4%	8.3%	8.8%	6.4%
In Year Volume Change %	-2.2%	-4.9%	-10.4%	-19.1%	-29.4%	-38.1%
In Year Revenue Change %	-0.3%	5.7%	7.9%	5.0%	-1.8%	-8.1%
Volume change % from Jan 1, 2025	1.5%	3.0%	-2.1%	-10.8%	-21.8%	-32.9%
Revenue change % from Jan 1, 2025	1.5%	12.4%	15.7%	13.6%	6.7%	-2.3%

Spark plug volume and revenue decline.

Pure ICE vehicles have already peaked and are declining in the VIO. The model shows:

- **In-year impact:**
 - The 100% reduction in ICE-driven demand translates into a 2.2% reduction in spark plug replacement in 2025, moving to a 10.4% decline in 2035 and a 38.1% reduction in 2050.
 - With inflation applied, revenues dip 0.3% in 2025, then climb slowly to 7.9% in 2035 before peaking and falling back to -8.1% in 2050.
- **Change vs. 2025 baseline:**
 - In 2035, annual spark plug sales volumes are down 2.1%.
 - By 2050, volumes are down 32.9%.
 - Inflation still lifts revenues 15.7% in 2035, but by 2050, revenues move into negative territory as the percentage of ICE vehicles in the VIO dwindles.

SA can tune the VIO Forecast to analyze future sales for any aftermarket parts supplier, distributor, or retailer. The model is sophisticated enough to account for VMT changes by powertrain type and VIO scrappage rates but is still considered a “blunt instrument” compared to its future potential as SA adds forecasts on the shift to fleet vehicles and a DIY/DIFM index to account for the increasing complexity of technology and the shift to more DIFM service.

[SA can apply this forecast](#) to specific product categories and aftermarket business strategies.



To understand how these replacement dynamics will evolve, it is also necessary to examine how the global OEM landscape itself is changing.

Vehicle OEM Evolution: Looking Ahead

Chinese vehicle manufacturers are now leading all global players in the development of new automotive technology and are positioning to dominate world production of automobiles over the next decade. Supporting evidence includes:

- › **AI safety.** Geely Auto, based in Hangzhou, China, is the first car company in the world to earn SGS-TÜV Saar ISO/PAS 8800:2024 certification for artificial intelligence (AI) safety process compliance. This confirms that Geely’s safety process architecture meets the latest standards for AI systems in road vehicles.
- › **High-performance BEVs for Europe.** Zeekr, a Geely brand, is offering BEVs for the European market that deliver nearly 400 miles of range, a 10%-80% charge time of 13 minutes, and a 10-year warranty.
- › **Record-setting performance.** The fastest production car in the world recently clocked a top speed of 308 mph: China’s Yangwang U9, a model from BYD.
- › **Battery dominance.** China’s CATL is the leading global BEV battery developer and producer, with an estimated 38% market share in the EV sector. Following its May 2025 IPO on the Hong Kong Exchange, which raised nearly \$5 billion, CATL announced plans to:
 - Expand manufacturing in Europe
 - Roll out battery-swapping and recycling technology in Europe

- Expand Indonesian production to capture Asian markets beyond China
- Introduce the **Freevoy Dual Power** battery, offering more than 900 miles of range using a dual-core design that divides a single battery into two independent energy zones – a main energy area and a range-extension area – each utilizing different cell materials to leverage their respective advantages.
- Push the boundaries of charging speed with the **Shenxing Superfast Charging Battery**, which offers 497 miles of range and a peak charging rate approaching 12C, with maximum charging power exceeding 1.3 megawatts. This results in 2.5 kilometers of range per second of charging and allows drivers to add more than 520 kilometers (323 miles) of range in just 5 minutes of charging.

In addition to these technological advantages, Chinese vehicle OEMs are widening the gap in manufacturing cost and time-to-market speed versus their Western competitors. A combination of lower labor costs, an integrated supply chain, and economies of scale in high-volume production – often supported by state-directed industrial policy and subsidies – yields an estimated 20%–40% manufacturing cost advantage for Chinese vehicles. Ongoing work in AI, software-defined vehicles, and robotics is widening that gap.

Time-to-market is another critical factor. The typical time to design, develop and produce a new vehicle is 4 to 5 years with outliers in the 3-year range. Chinese vehicle OEMs are now operating with an 18-month development cycle. If the resulting vehicles were poorly built or underperforming, the speed itself would be a possible downside – but that has not been the case.



Ford and GM have already written off billions of dollars in their start-and-stop approach to BEV programs that have not aligned with consumer demand. As they have dithered, seven Chinese vehicle OEMs have either begun manufacturing in Europe or entered joint ventures with European firms to place plants there. They are also building the “Polar Silk Road” to exploit an Arctic supply chain route to Europe that will cut parts delivery times in half. Taken together, these moves further weaken GM and Ford’s global position and threaten their overall cash flow.

SA sees Ford and GM (with Stellantis included, even though it is more European than domestic) fighting back with a three-pronged approach to customer retention:

- 1. Balanced ICE/BEV product lines** using partnerships with other vehicle brands and contract manufacturing for ICE platform engines.
- 2. Radical improvements** in manufacturing quality and product development timeframes.
- 3. A new dealership business model** that uses vehicle connectivity, software-defined vehicles, and over-the-air (OTA) updates to retain customers and drive a much longer horizon of service at OE dealerships.

Items one and two are a race against the Chinese brands that have benefitted from the subsidies of a communist government. At the same time, Chinese auto brands are now dealing with the consequences of rapid expansion and overcapacity. The Chinese domestic market demand is roughly 27 million. Its ICE and BEV manufacturing capacity is 55 million units with about 6 million vehicles being exported worldwide. That's a 20+ million unit problem.

China's ruling party is establishing a "glocalization" of manufacturing plants around the world that will further exacerbate the overcapacity of its domestic supply. Then it is allowing domestic brands to duke it out in the marketplace for survival. Ford, GM, and Stellantis can win by balancing their product lines to match consumer demand and by battling China's lead in vehicle software and time-to-market development.

Item three is where U.S. domestic brands will win, and it might just change the entire auto aftermarket power dynamic. By harnessing the combined power of software-defined vehicles, predictive analytics, OTA updates, and V2X (Vehicle to Everything) connectivity, domestic auto brands are working to alter the service patterns of vehicle ownership.

WHY THIS MATTERS

▼
OEM strategy is shifting from vehicle sales to software control and service capture. If extended warranties and vertically integrated dealer networks take hold, the aftermarket power structure could change. Companies that track these moves early are able to adjust.

The strategic plan includes:

- › Making radical improvements in manufacturing quality to lower the cost of quality and make longer warranties affordable for the OEM
- › Moving to 10-year/100,000-mile warranties to lock customers into dealer service for longer (note the new 2026 Ram 1500's 10-year/100,000-mile limited powertrain warranty)
- › Using OTA updates to reduce the need to attend to repairs
- › Converting OE dealerships from sales-centric to parts/service-centric. *(Note: Hyundai's experiment with selling new vehicles on Amazon Autos increased dealer traffic by 41% and is now expanding to certified used vehicles. Ford has also announced a CPO program to sell existing dealer used-vehicle stock via Amazon.)*
- › Having OE dealerships acquire general repair shops to add bay count for all vehicle brands and create a vertically integrated parts and service supply chain straight through to the part installer

SA does not think the tariff blockade against selling Chinese vehicles in the U.S. will last forever, and it is reasonable to bet that Chinese vehicles will be produced in North America for the domestic market. However, the one vulnerability the Chinese currently have is a lack of a global dealership network and domestic brands can beat them at that game.

Why would OE dealerships buy independent general repair shops? *Because over the next decade, this is likely to be one of the hottest M&A environments in the aftermarket. As private equity rolls up independent shops into nationwide MSOs, vehicle ownership moves from private to fleet, and autonomous vehicles enter the VIO, the power of the aftermarket will shift from today's parts retailers to tomorrow's shop owners.*

SA

The U.S. Auto Aftermarket Power Revolution

As the global OEM landscape shifts, the U.S. auto aftermarket is undergoing a parallel transformation. It can adapt to OEM ownership changes and sell parts for Chinese vehicles just as easily as it does for domestic or European brands. However, the bigger picture regards where power lies in future distribution channels. Get ready for seismic change.

Here's How SA Frames the Evolution of The Aftermarket Over the Past Two Decades:

2000–2020

E-commerce transformed DIY parts selection and purchasing. Retailers gained additional power through economies of scale, widening cost gaps with WDs. Extended payment terms — often stretching to 365 days — further weakened manufacturers' market positions. Many WDs pivoted toward fulfillment roles for large online retailers.

2020–TODAY

COVID-19 disrupted everything and supply chains collapsed while e-commerce ramped up. Tariffs pressured cash flow. The big parts retailers had the balance sheets to stem the tide while WDs fell further behind. Manufacturers were relegated to white label boxes and placements on Amazon and eBay.

TODAY–2035

Approximately 85,000 general repair shops are now in the crosshairs of a few dozen private equity firms with the capacity to roll up a few thousand shops that will create giant MSOs. Well-run shops generate strong cash flow and build enterprise value quickly by increasing year-over-year vehicle throughput. Increasingly, they partner with local OE dealerships to handle the technology challenges of new vehicle designs. SA sees those partnerships morphing over time to ownership.









If the combination of PE-owned vehicle repair MSOs and expanded OE dealership service locations works, the power of today's auto parts retailers shifts and shops start calling the shots. It is already starting to happen.

3 | ENGAGEMENTS





Select Transactions

For a full list of SA Engagements, visit SchwartzAdvisors.com.

SELL-SIDE

<p>SELL-SIDE</p>  <p>National provider of specialty equipment rental, sales, and service solutions for mission-critical applications within the electric transmission and distribution, sewer maintenance and inspection, and utility markets. Recapitalized by Kinderhook Industries.</p> 	<p>SELL-SIDE</p>  <p>Traditional automotive warehouse, with 21 retail and wholesale locations in metro New York City. Acquired by Transtar Industries/NexaMotion Group.</p> 	<p>SELL-SIDE</p>  <p>Largest independent auto recycler in North America with 17 locations in four states. Partnered with Highview Capital.</p> 	<p>SELL-SIDE CO-ADVISORY</p>  <p>Provider of alternative automotive replacement parts, including both remanufactured OEM and aftermarket lights and wheels. The company serves collision repair and tire service channels through a nationwide distribution network of 13 facilities. Acquired by BBB Industries, a portfolio company of Clearlake Capital.</p> 
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SPONSOR ADVISORY

<p>BUY-SIDE</p>  <p>MANUFACTURER A major manufacturer engaged SA in a buy-side search.</p>	<p>BUY-SIDE</p>  <p>QUICK LUBE A private equity client engaged SA to assist with the acquisition and due diligence of a quick lube franchise MSO.</p>	<p>BUY-SIDE</p>  <p>DISTRIBUTION ACQUISITION A private equity client engaged SA to assist with the assessment and thesis pressure-testing of a potential multi-billion dollar distribution acquisition.</p>	<p>BUY-SIDE</p>  <p>MOBILE TRUCK REPAIR A major heavy-duty distributor worked with SA to assess and acquire a mobile truck repair business.</p>
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STRATEGIC GROWTH

<p>STRATEGIC GROWTH</p>  <p>DISTRIBUTION EXPANSION Assisted a major Canadian distributor with a footprint-expansion project.</p>	<p>STRATEGIC GROWTH</p>  <p>MARKET PENETRATION Formulated a strategy to guide a South American supplier's entrance into the North American aftermarket.</p>	<p>STRATEGIC GROWTH</p>  <p>GROWTH STRATEGY Worked with a global automotive supplier to develop organic growth strategies.</p>	<p>STRATEGIC GROWTH</p>  <p>GROWTH STRATEGY Developed a multi-line go-to-market growth strategy for an international auto parts remanufacturer.</p>
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About Schwartz Advisors

Schwartz Advisors (SA) is an accomplished and experienced team of mobility aftermarket professionals who expertly facilitate buy-side, sell-side, and growth strategy projects. With deep industry expertise, SA delivers unparalleled insight into aftermarket trends and opportunities.

What We Do:

- › **Sell-Side Advisory.** SA supports family- and founder-owned businesses, as well as private equity portfolio companies, seeking to evaluate their options. With strong connections to strategic buyers and private equity investors, SA understands buyer preferences, delivers successful, actionable matches, and ultimately negotiates the best transaction for clients.
- › **Sponsor Advisory.** Investors and strategic buyers trust SA for comprehensive mobility aftermarket insights and a unique, in-depth approach to acquisitions and due diligence.
- › **Growth Strategy.** Growth initiatives require insight, expertise, and experience – and the SA team delivers with each strategic growth project. Clients choose SA to help clarify product line expansions, improve sales positioning, or fine-tune an acquisition strategy with a proven methodology.

SA's proprietary Vehicles in Operation (VIO) Forecast Model provides a data-backed look at VIO growth trends. The model helps mobility aftermarket companies prepare for shifts in powertrains, parts usage, technology adoption, and long-term service requirements. This report illustrates how SA's VIO Forecast Model can clarify the aftermarket's future and highlight future opportunities. The examples that follow show how this forecast is applied to specific parts categories and can be extended to a company's own product portfolio.

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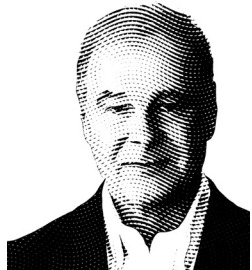
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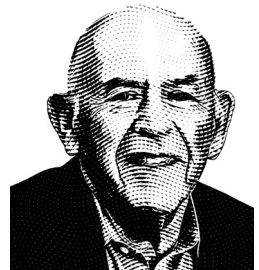
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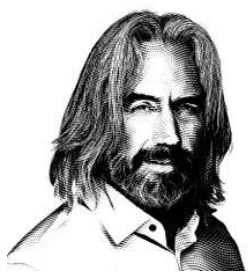
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2026 Conference Attendance:

HDAW January 19-22; Grapevine, Texas

CAWA LEADERSHIP FORUM January 27-29; Napa, California

THE WORK TRUCK SHOW March 10-13; Indianapolis, Indiana

MEMA VISION CONFERENCE April 15; Dearborn, Michigan

AUTO CARE CONNECT SPRING May 11-14; Atlanta, Georgia

REMANUFACTURING ROADSHOW &

ANNUAL CONFERENCE June 16-17; Grand Rapids, Michigan

CAWA LEADERSHIP FORUM June 23-25; Sacramento, California

AUTOMECHANIKA FRANKFURT September 8-12; Frankfurt, Germany

AUTO CARE CONNECT FALL September 16-18; Louisville, Kentucky

AAPEX & SEMA November 3-5; Las Vegas, Nevada

Unlike traditional bankers or consultants, our team of industry leaders has the expertise, knowledge, insight and connections developed throughout our careers as operators in the mobility aftermarket.

We have what you require, whether you operate a local family-owned business or a multinational company.

SA. We Know the Road.

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